YOUR FINAL TASK

COMPUTER PROGRAMMING 2
(Week 9)

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A. Instructions: Write **True** on the blank provided if the statement is correct, otherwise, write **False**.

False 1. Classes that help handle errors in Java are called error classes.

"Error clasess does not handle errors. However, exception classes makes it possible through try-catch to handle unchecked and checked type of errors."

True 2. It is possible to have several `catch` blocks following a `try` block.

"We can have multiple `catch` blocks for single `try` block. But only one `try` block is allowed"

False 3. A `try` block does not need to have a matching `catch` block.

"There are three premutations of try/catch/finally block: try...catch; try...catch...finally; and try...finally. Therefore, it is not necessary that each `try` block must be followed by a `catch` block. However, it is needed that it must be followed by either a `catch` block or a `finally` block. And whatever exceptions are likely to be thrown should be declared in the throws clause of the method."

False 4. A `catch` block does not need to have a matching `try` block.

"It is necessary for a block to be `catch` paired with a try block."

True 5. Several `catch` statements following a single `try` statements should handle different exceptions.

"Every catch statements must handle various exceptions to avoid redundancy. Otherwise, it will return " java: exception java.lang.[type of sub-exception] has already been caught"

False 6. The `finally` statement is required after using `try` and `catch` statements.

"`try-catch` statement can run without being paired with `finally` block."

True 7. The block within the `finally` statement will be executed regardless of whether or not an error is encountered.

"Before the method is complete, `finally` block will always run after the try and any catch block. Therefore, `finally` block executes regardless of whether an exception is thrown or caught."

True 8. The `IOException` class handles errors that occur during input and output.

"IOException is a Java exception that occurs when an IO operation fails."

True 9. The `Exception` class handle all types of exceptions.

"Since Exception is the base class of all exceptions, it will catch any exception. `Exception` is like a 'catch all' exception handler that is a broader type of exception handler. While those sub-exception handers such as ArrayIndexOutOfBoundsException is a specific type of a handler. Therefore, any exception that may get thrown is an Exception"

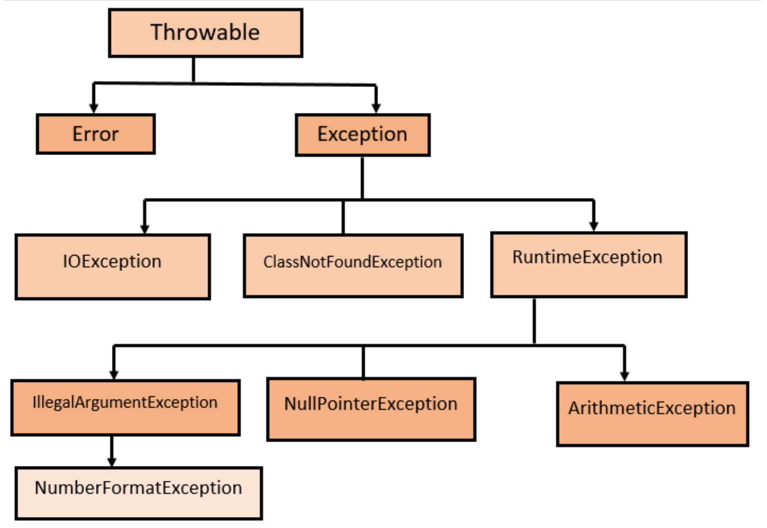
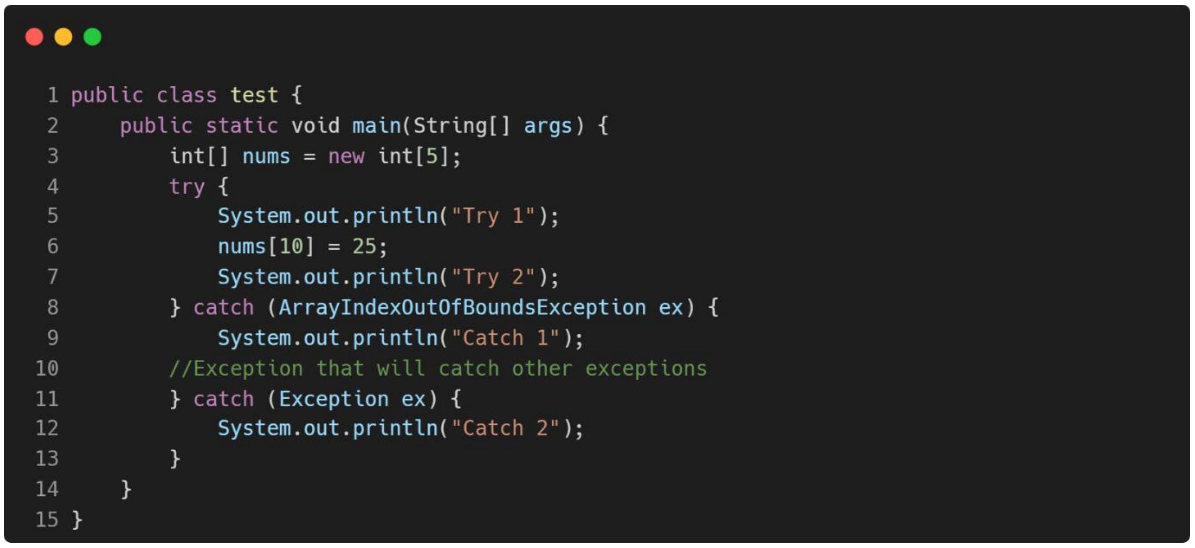


Figure 1. Types of Exceptions

False 10. Declaring `catch` blocks before a block that handles an `Exception` class to handle other types of errors would be redundant.

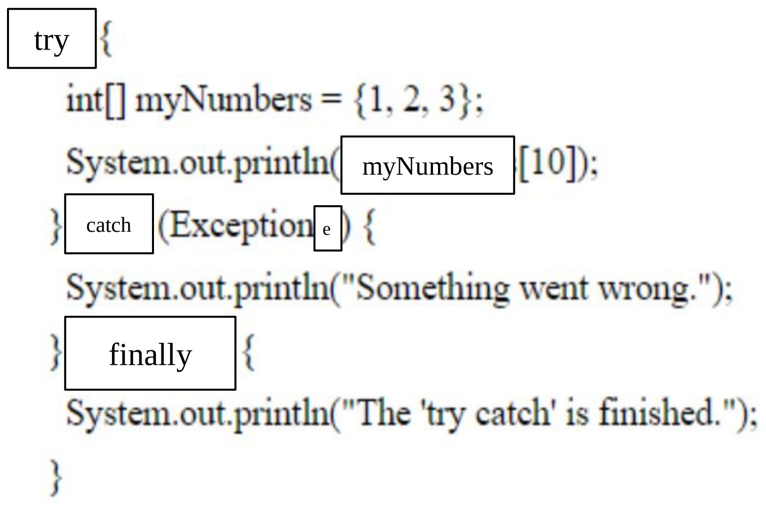
"`catch` blocks before an `Exception` class that will handle other unknown exceptions is not redundant. `catch` exceptions before the `Exception` class is defined for the purpose of specifity. While `Exception` class is defined in order to handle other errors that are not handled specifically.



```java
public class test {
    public static void main(String[] args) {
        int[] nums = new int[5];
        try {
            System.out.println("Try 1");
            nums[10] = 25;
            System.out.println("Try 2");
        } catch (ArrayIndexOutOfBoundsException ex) {
            System.out.println("Catch 1");
        //Exception that will catch other exceptions
        } catch (Exception ex) {
            System.out.println("Catch 2");
        }
    }
}
```

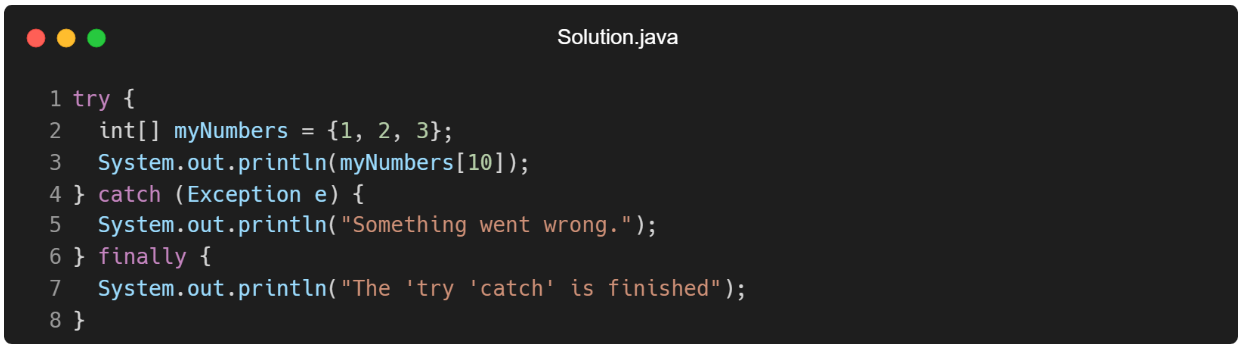
B. Instructions: Insert the missing keyword to execute code, after try catch, regardless of the result.

Problem



```
try {
    int[] myNumbers = {1, 2, 3};
    System.out.println(myNumbers[10]);
} catch (Exception e) {
    System.out.println("Something went wrong.");
} finally {
    System.out.println("The 'try catch' is finished.");
}
```

Solution



Solution.java

```
try {
  int[] myNumbers = {1, 2, 3};
  System.out.println(myNumbers[10]);
} catch (Exception e) {
  System.out.println("Something went wrong.");
} finally {
  System.out.println("The 'try 'catch' is finished");
}
```

C. Instructions: Give the output produced by the following code snippets.

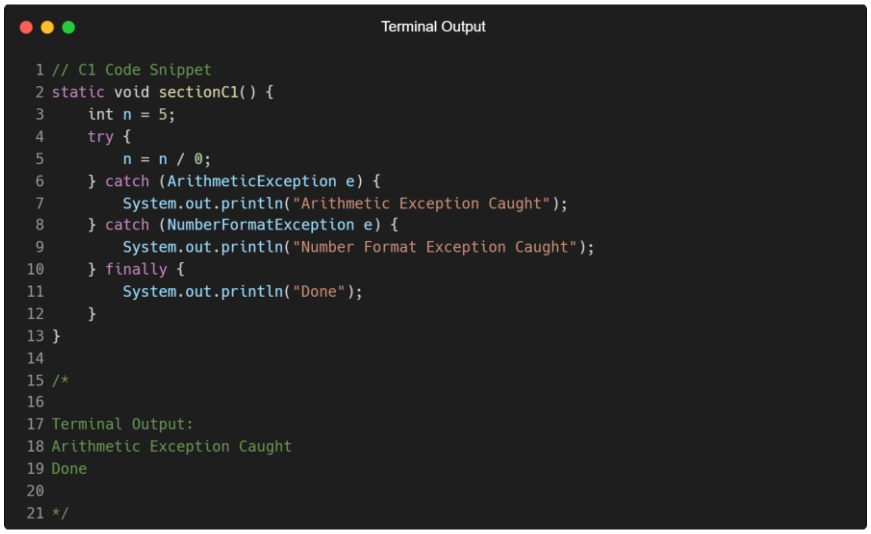
```
1. int n = 5;
   try {
          n = n / 0;
   }
   catch (ArithmeticException e) {
          System.out.println(“Arithmetic Exception Caught”);
   }
   catch (NumberFormatException e) {
          System.out.println(“Number Format Exception Caught”);
   }
   finally {
          System.out.println(“Done”)
   }
```

Answer:

```
java: ‘;’ expected; Line #
```

Realistically, the provided code will result a syntax error. That is because in Line 12, in finally block, the print method has a missing semicolon. Therefore, the output that will be produced when strictly following the provided code snippet will be “java: “expected; Line 11.”

Proof of Error



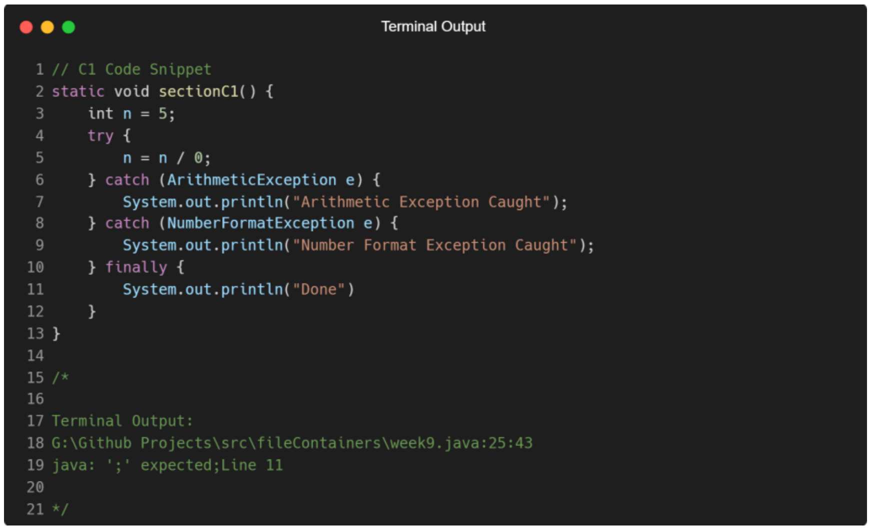
Terminal Output

```
 1 // C1 Code Snippet
 2 static void sectionC1() {
 3     int n = 5;
 4     try {
 5         n = n / 0;
 6     } catch (ArithmeticException e) {
 7         System.out.println("Arithmetic Exception Caught");
 8     } catch (NumberFormatException e) {
 9         System.out.println("Number Format Exception Caught");
10     } finally {
11         System.out.println("Done");
12     }
13 }
14
15 /*
16
17 Terminal Output:
18 Arithmetic Exception Caught
19 Done
20
21 */
```

To alleviate the simple error, we can simply add a semicolon before the error line and the output will be:

```
Arithmetic Exception Caught
Done
```

C2 Final Answer and Proof



Terminal Output

```
 1 // C1 Code Snippet
 2 static void sectionC1() {
 3     int n = 5;
 4     try {
 5         n = n / 0;
 6     } catch (ArithmeticException e) {
 7         System.out.println("Arithmetic Exception Caught");
 8     } catch (NumberFormatException e) {
 9         System.out.println("Number Format Exception Caught");
10     } finally {
11         System.out.println("Done")
12     }
13 }
14
15 /*
16
17 Terminal Output:
18 G:\Github Projects\src\fileContainers\week9.java:25:43
19 java: ';' expected;Line 11
20
21 */
```

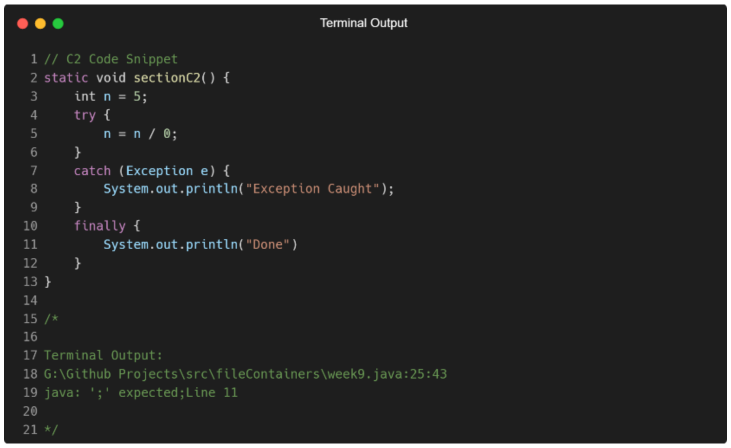
```
2. int n = 5;
   try {
         n = n / 0;
   }
   catch (Exception e) {
         System.out.println("Exception Caught");
   }
   finally {
         System.out.println("Done")
   }
```

Answer:

```
java: ‘;’ expected; Line #
```

The same error is encountered in this snippet from the previous snippet. However, the solution is the same.

Proof of Error

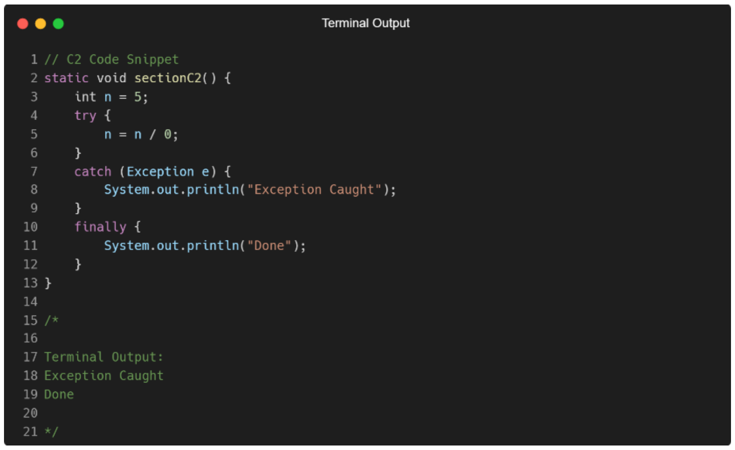


Terminal Output

```
// C2 Code Snippet
static void sectionC2() {
    int n = 5;
    try {
        n = n / 0;
    }
    catch (Exception e) {
        System.out.println("Exception Caught");
    }
    finally {
        System.out.println("Done")
    }
}

/*

Terminal Output:
G:\Github Projects\src\fileContainers\week9.java:25:43
java: ';' expected;Line 11

*/
```

C2 Final Answer and Proof

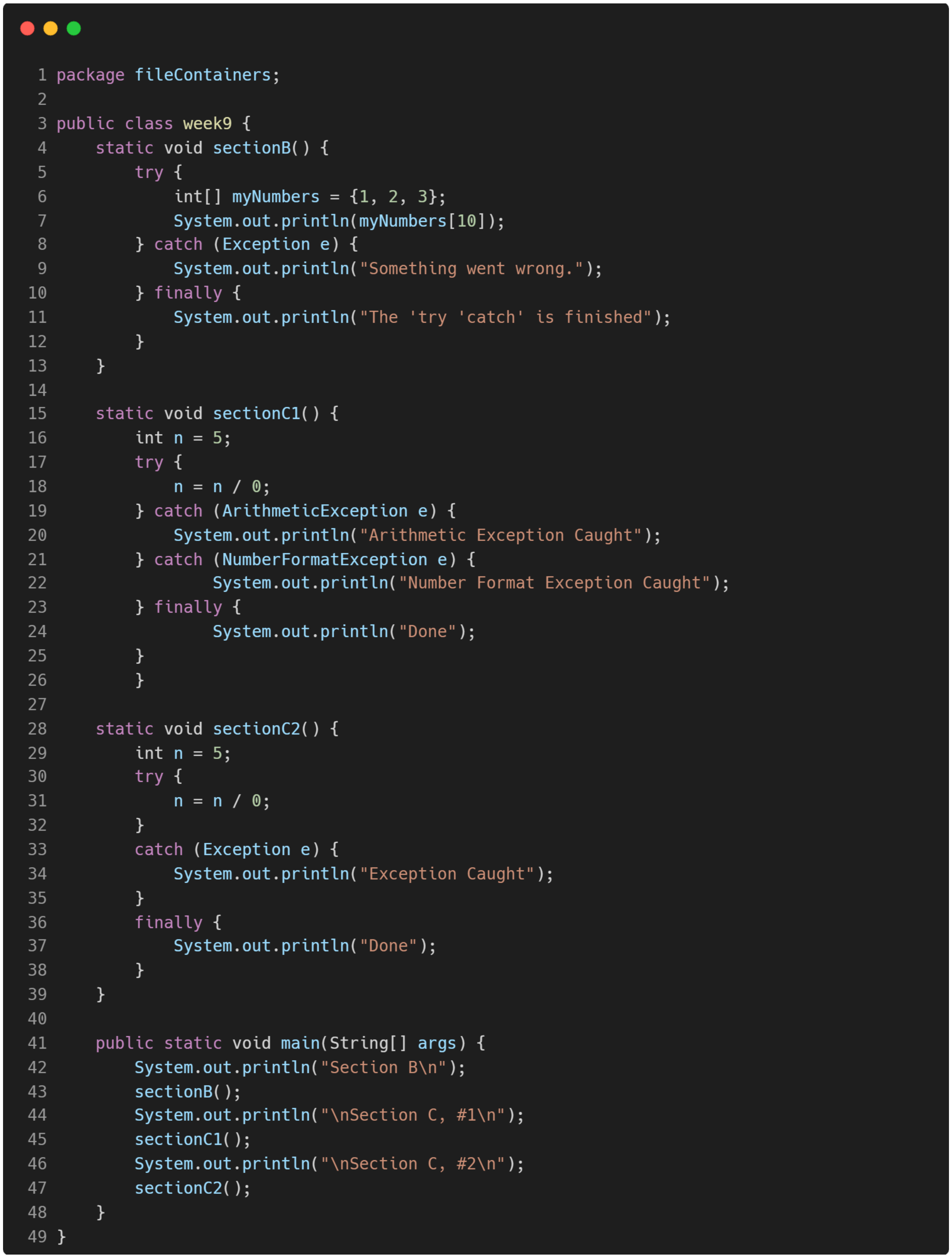
```
Exception Caught
Done
```



Terminal Output

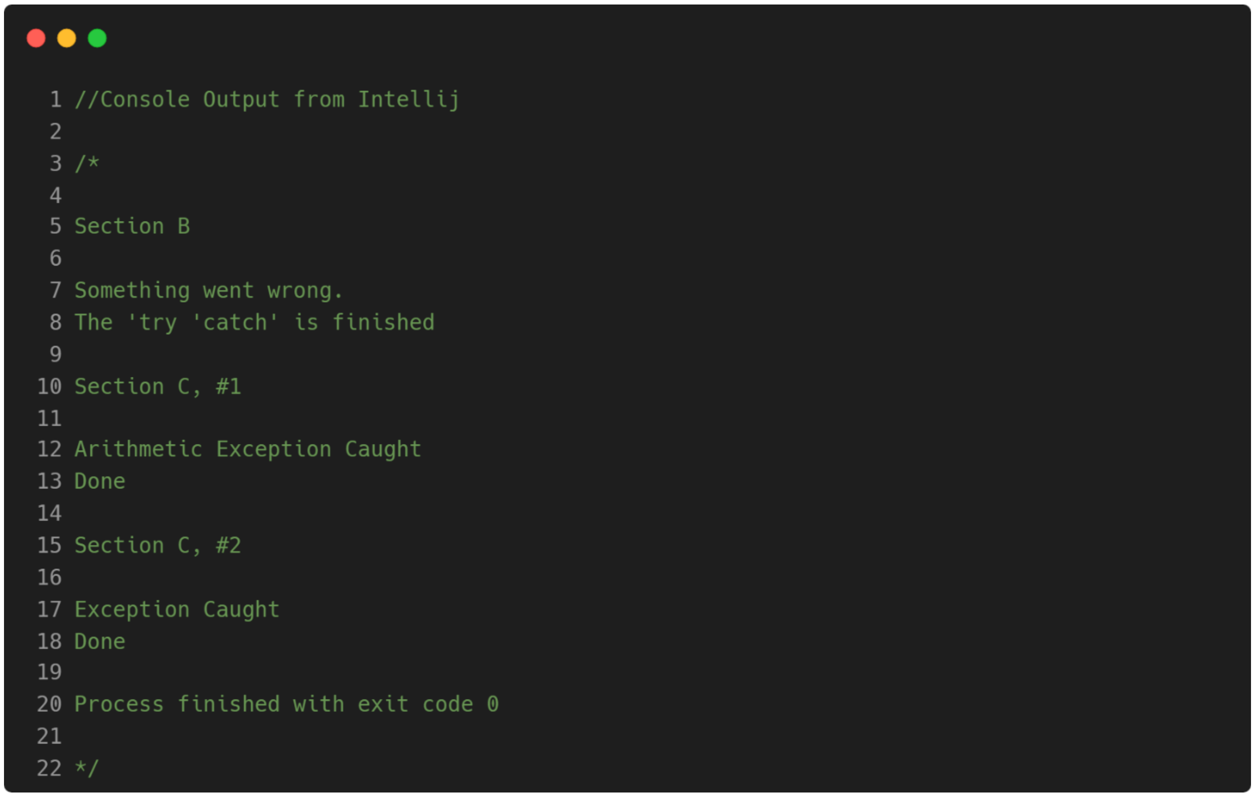
```
// C2 Code Snippet
static void sectionC2() {
    int n = 5;
    try {
        n = n / 0;
    }
    catch (Exception e) {
        System.out.println("Exception Caught");
    }
    finally {
        System.out.println("Done");
    }
}

/*

Terminal Output:
Exception Caught
Done

*/
```

Appendix I



```java
package fileContainers;

public class week9 {
    static void sectionB() {
        try {
            int[] myNumbers = {1, 2, 3};
            System.out.println(myNumbers[10]);
        } catch (Exception e) {
            System.out.println("Something went wrong.");
        } finally {
            System.out.println("The 'try 'catch' is finished");
        }
    }

    static void sectionC1() {
        int n = 5;
        try {
            n = n / 0;
        } catch (ArithmeticException e) {
            System.out.println("Arithmetic Exception Caught");
        } catch (NumberFormatException e) {
                System.out.println("Number Format Exception Caught");
        } finally {
                System.out.println("Done");
        }
        }

    static void sectionC2() {
        int n = 5;
        try {
            n = n / 0;
        }
        catch (Exception e) {
            System.out.println("Exception Caught");
        }
        finally {
            System.out.println("Done");
        }
    }

    public static void main(String[] args) {
        System.out.println("Section B\n");
        sectionB();
        System.out.println("\nSection C, #1\n");
        sectionC1();
        System.out.println("\nSection C, #2\n");
        sectionC2();
    }
}
```

Appendix II



```
//Console Output from Intellij

/*

Section B

Something went wrong.
The 'try 'catch' is finished

Section C, #1

Arithmetic Exception Caught
Done

Section C, #2

Exception Caught
Done

Process finished with exit code 0

*/
```